Correlations between partons in nucleons

Monday 30 June 2014 - Friday 04 July 2014

LPT Orsay

Scientific Programme

Long lectures :

- ***Marco Stratmann***, Brookhaven National Laboratory (USA)

Partons Distribution Functions and the LHC (6h)

Introduction to QCD. Partons. Application to the LHC or to an EIC.

- ***Markus Diehl***, DESY (Germany)

Multi Parton Interactions (6h)

Space-time, spin and color structure of multiple parton interactions. Elements required for establishing all-order factorization. Constraints on multiparton distributions from lattice calculations, connections with generalized parton distributions, and behavior at large transverse parton momenta.

- ***Cédric Lorcé***, IPNO (France) and IFPA Liège (Belgium)

Nucleon structure (4h)

Generalized Parton Distributions, Transverse Momentum Dependent parton

distributions, Wigner functions. Spin and energy momentum structure.

- ***Raju Venugopalan***, Brookhaven National Laboratory and Stony Brook University (USA)

Color Glass Condensate (4h)

The nucleon as a Bose condensate of gluons. Saturation. Phenomenology of the CGC.

- ***Leif Lönnblad***, Lund Observatory (Sweden)

Introduction to event generators physics (3h)

Monte Carlo even generators, parton showers, multi parton interactions.

- ***Abhay Deshpande***, Stony Brook University (USA)

The questions of Hadronic physics (3h)

Quantitative and intuitive understanding of hadron substructure and formation. Ability of existing theoretical tools to describe data. Role of nuclear environment on the partonic structure of the nucleon.

Short lectures :

- ***Paolo Bartalini***, CERN and Central China Normal University (China)

CMS and ATLAS signals for MPI processes (1.5h)

Hints for MPI signals from ATLAS and CMS.

- ***Sarah Porteboeuf-Houssais***, LPC Clermont Ferrand (France)

ALICE signals for MPI processes (1.5h)

Hints for MPI signals from ALICE.

- ***David Kosower***, IPhT (France)

Introduction to multi-gluons processes (1.5h)

Recent theoretical developments in the computation of scattering amplitudes.

Student seminars :

There will be five 30 min. slots (one each day) devoted to informal seminars from volunteer students attending the schools.

